Shropshire Botanical Society

Newsletter

Autumn 2004

Shropshire Botanical Society Newsletter No. 11 Autumn 2004

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Membership list with renewal dates ..... back cover

Cover photos: a clearing in Oaks Wood (A.J. Lockton). Inset: *Fomes fomentarius* (Lockton) and *Jamesoniella undulifolia* (F.J. Rumsey).

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Any opinions expressed in this newsletter are those of the various authors, and are not necessarily those of the Society

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Botanical Society News

Sarah Whild

The BSBI's Local Change project has been one of the main activities of the year. We had to cover three tetrads in each of four hectads, giving a total of 12 sites to be surveyed. Many people helped with the surveys, especially on the organised field trips, but I would like to particularly thank Hugh Cutler, Ruth Dawes, Pam Green, Sylvia Kingsbury, Marjorie Leonard and Steve & Elise O'Donnell for taking on whole squares. No-one volunteered to do SO68 (Corvedale) at all, so in the end the committee decided to hire Kate Thorne to do it, and we are pleased to say that she did a fine job.

Fred Rumsey was an inspiring speaker at the AGM, introducing us to the world of rare bryophytes. During the summer we had five field meetings, which were uneventful but not unenjoyable. Blakeway Coppice was very fine in the spring, and yielded such interesting finds as a new tetrad for *Paris quadrifolia* and the first sighting of *Ranunculus parviflorus* at Presthope since 1904. Whiston Meadows produced a marvellous display of orchids, including a new hybrid for the county. It was rainy for the Oswestry Racecourse day, and the racecourse itself was so gloomy and wet that we explored Candy Valley instead. There was supposed to be a sedge identification session at Granville Country Park in July, but rabbits had eaten all the spikes, so we did a Local Change square, and found some interesting water plants in Trench Pool. Finally, we visited south Shropshire, where John Clayfield showed us one of the last four populations of *Campanula patula* remaining in the county, an experience marred slightly by the motor rally taking place along the same lanes…

I would like to thank Dorothy Young for kindly sending a copy of Archdeacon Plymley's 1803 *General View of the Agriculture of Shropshire*, which turns out to contain several important early records by Joseph Babington. Andrew Allott invited us to visit the Shrewsbury School herbarium and allowed us to take away some of the folders for expert determination. It cost the Society about £100 to have the fumitories professionally remounted at Cardiff Museum, which turned out to be well worth the price, as Tim Rich found some rather important specimens among the collection – see the account on page 10.

The meeting this winter will be, as usual, at Preston Montford, by the kind invitation of Sue Townsend and the Field Studies Council. Ian Trueman will be speaking about his hay meadow creation experiments, which should give rise to some healthy debate about conservation and nature. All members are invited, and there will be mince pies and sherry to tempt you.

Winter Meeting
Saturday 4th December 2004
Preston Montford Field Centre, Shrewsbury
at 2pm
Speaker: Prof. Ian Trueman
Creating species-rich grasslands by hay-strewing

Please pencil into your diaries the Next Annual General Meeting, which will be on Saturday 23rd April 2005. May I also remind members that our membership system is that subs are due on the 1st January each year, and the year that each member's next subscription is due is given on the membership list printed on the back cover of the newsletter.

Recorders in 2004

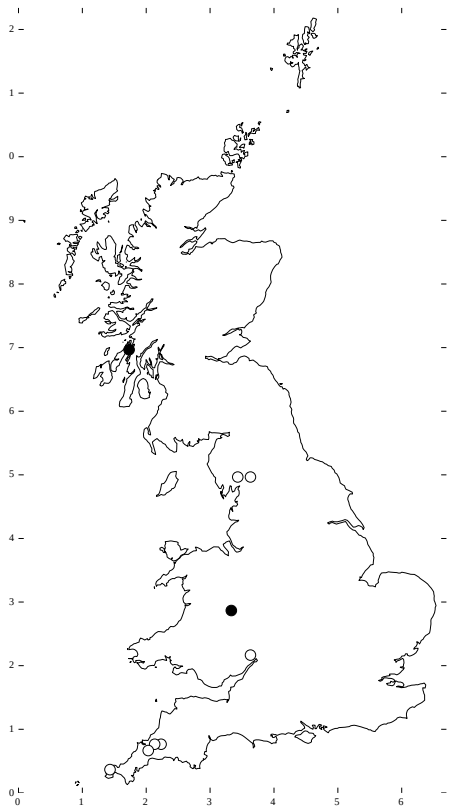
Andrew Allott
Andy Barker
Denise Bingham
John Bingham
Pete Boardman
Peter Brown
Shirley Burton
John Clayfield
Wendy Compson
Andrew Cooke
Mags Cousins
Robin Cure
Allan Dawes
Ruth Dawes
Iain Diack
Matthew Dodds
Glenys Evans
Fiona Gomersall
Hannah Graves
Roger Green
Pam Green
Joanna Haigh
Tom Holland
Dr H.V.Hughes
Joanne Ilsley
Jane Ing
Ron Iremonger
Mark Jannick
Marjorie Leonard
Susan Lewis
Stephen Lewis
Philip Lumley
Roy Mantle
John Mason
Rob Mileto
Tess Pearson
Jackie Pedlow
Ken Perry
Jan Pursaill
Mervyn Rogers
Rob Rowe
Fred Rumsey
Laura Spence
Eric Steer
Nick Stewart
Rob Stokes
John Swindells
Jo Thompson
Ian Thompson
John Thompson
Kate Thorne
Sue Townsend
John Tucker
Chris Walker
Jo Woolley
Dan Wrench
Dorothy Young

New Records

- In this newsletter we have the pleasure of publishing our first basidiomycete record, of **Hoof Fungus**, *Fomes fomentarius* (L. ex Fr.) Fr., which is illustrated on the front cover. This distinctive fungus was found by Sue Townsend on Bedford Willow, *Salix fragilis* ssp. *russelliana*, at Shrawardine Pool, SJ399160. The only other record for it in the county, according to the web site of the British Mycological Society, is a very old one from the same 10km square.

- Dan Wrench discovered **Marsh Earwort** *Jamesoniella undulifolia* (Nees) Müll.Frib. on Hopesay Hill (SO3983) on 24th September 2004 (conf. G.P. Rothero, **BBSUK**). This is a very rare liverwort of valley mires and raised bogs, and is a Red Data Book species in Britain, with just two other current sites. It is also considered to be internationally rare, being widely but sparsely distributed throughout northern temperate regions of the globe.

Jamesoniella undulifolia



- **Cavernous Crystalwort**, *Riccia cavernosa* Hoffm., is a Nationally Scarce liverwort that occurs on lake margins and other seasonally inundated habitats. It was found at Brown Moss (SJ562394) by Nick Stewart and Sarah Whild on 28th July 2004 (conf. N.G. Hodgetts). This is only the second record for it in the county – the first was in 1998 when Ray Woods discovered it at Dudmaston (SO7489).

- The **hybrid fern** *Dryopteris x deweveri* (J.T. Jansen) Wacht. (*D. carthusiana* (Vill.) H.P. Fuchs Narrow Buckler-fern × *D. dilatata* (Hoffm.) A. Gray) Broad Buckler-fern) is fairly common wherever the parents occur together. Fred Rumsey found it in woodland on the edge of Whixall Moss (SJ486354) on 20th October 2004 (**BM**). This is only the second record for the county, but it should be looked for elsewhere, especially around the meres & mosses.

- *Ranunculus ficaria* L. ssp. *ficariiformis* (F.W. Schultz) Rouy & Foucaud, a type of **Lesser Celandine**, was found by Dr H.V. Hughes on a roadside near Albrighton (SJ813034) in 2004 (conf. S.J. Whild). It is considered to be a garden escape that is well naturalised in south-west Britain; 1st v.c. record.

- Rob Stokes found **Atlas Poppy** *Papaver atlanticum* (Ball) Coss. at Bridgnorth (SO722924) on 9th September 2004 (conf. S.J. Whild). This is another garden escape that is occasionally found naturalised; 1st v.c. record.

- Stace (1997) does not recognise **Cut-leaved Beech** *Fagus sylvatica* var. *heterophylla* as a separate taxon, but it is a very distinctive plant. It was found on a roadside at Waters Upton (SJ630195) by S.J. Whild & A.J. Lockton on 18th August 2004 (Hb. **SFG**) where it was undoubtedly planted; 1st v.c. record.

- There are two varieties of **Corn Spurrey** *Spergula arvensis* L. that might be expected to occur in Shropshire. The var. *sativa* (Boenn.) Mert. & W.D.J. Koch occurs in north-west Britain and has been recorded here several times in the past, most recently by Frank Perring at Berrington Pool (SJ5207) in 1993. A plant collected there this year, however, turned out to be var. *arvensis* (Alex Lockton, 19th June 2004, SJ525071, conf. Whild), which is commoner in the south-east of Britain; 1st v.c. record.

- The common subspecies of **Black Bindweed** *Fallopia convolvulus* (L.) Á. Löve var. *convolvulus* has not explicitly been recorded in the county before this year. Just for the record: Berrington Pool, SJ525071, Alex Lockton, 19th June 2004, conf. S.J. Whild; 1st v.c. record.

- John Swindells and Sarah Whild found **Garden Rocket** *Eruca vesicaria* (L.) Cav. as a casual by the Severn at Monkmoor (SJ5213) on

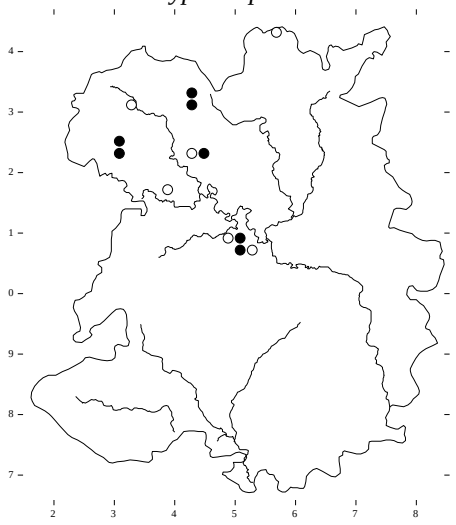
29th May 2004. They missed the opportunity to record the subspecies, although there's probably only the one, so we can look forward to that exciting discovery in a future newsletter; 1st v.c. record.

- **Chinese Bramble** *Rubus tricolor* Focke is naturalised by the Severn at Greyfriars Bridge in Shrewsbury, SJ495122 (Whild & Lockton, 17th May 2004, Hb. SFG); 1st v.c. record.
- **Round-fruited Cockspur-thorn** *Crataegus succulenta* Schrad. was collected at Priorslee (SJ722105) by Rob Stokes on 12th May 2004 (det. S.J. Whild, Hb. SFG). This is one of several exotic species of hawthorn that are sometimes planted in hedges and occasionally naturalised; 1st v.c. record.
- *Coriandrum sativum* L. **Coriander** was spotted by Dan Wrench along a track at Whiston Farm (SJ791027) during the meeting there on 9th June 2004 (Hb. SFG). Its origin is unknown, and it was not part of a crop, but it was probably a casual – possibly a seed contaminant? 1st v.c. record.
- Rob Stokes spotted a plant of **Milky Bellflower** *Campanula lactiflora* M. Bieb. on a retaining wall at Lilleshall Abbey (SJ738143) on 17th August 2004. It is grown as a garden plant and is sometimes naturalised.
- *Senecio vulgaris* L. var. *vulgaris* has not, technically, been recorded in Shropshire before, although it is strongly implied by the account given in Sinker's Flora. It is the normal form of **Groundsel** without elongated ray florets. It was recorded by Sarah Whild and Alex Lockton at Hadley Park (SJ672135) on 21st May 2004.
- **Ragweed** *Ambrosia artemisiifolia* L. is an introduction from North America that has been spreading in Britain in recent years. It was first recorded in the county at Llanymynech station (SJ2621) by Doris Pugh (conf. C.A. Sinker) in 1963, but it did not persist there. This year it turned up amongst dumped garden rubbish at Waters Upton (SJ630197, Whild & Lockton, 18th August 2004) and on the towpath by the Severn in Shrewsbury (SJ495128, Lockton, 17th September); 2nd & 3rd v.c. records.
- The common subspecies of **Silver Hair-grass** is *Aira caryophyllea* L. ssp. *caryophyllea*. It was collected by John Tucker at Caer Caradoc (SO314756) on 13th August 2004 (det. S.J. Whild, Hb. SFG); 1st v.c. record.
- *Polypogon viridis* Gouan (Breistr.) **Water Bent** was first introduced into Britain in 1800 and has been spreading in recent years, although it is still not common according to the *New Atlas*. It turned up all along the roadside in Benyon Street, Castlefields (SJ497132), where it was spotted on 18th September 2004 by Sarah Whild (Hb. SFG). The origin of the plants there is unknown, but it does not seem to have come from any nearby gardens.
- The **hybrid orchid** *Dactylorhiza x hallii* (Druce) Soó, a cross between Southern Marsh-orchid *D. praetermissa* and Heath Spotted-orchid *D. maculata*, was collected at Whiston Meadows, SJ784025 & SJ785027, by Sarah Whild, Hugh Hughes and Alex Lockton on 9th June 2004, and confirmed by Richard Bateman, at the Natural History Museum. It was growing with both parents in a large flood meadow; 1st v.c. record.

Rare Plants

- **Marsh Fern** *Thelypteris palustris* Schott was recorded at Cole Mere (SJ4333) by W.T. Burges in about 1877. There is also a record of it there in Diamond's Flora of Oswestry, 1891. However, it has never been seen there since. In 1969 Ian Bonner found it at the nearby Black Coppice Pool, and commented that a specimen from this locality, collected in 1892, was in the Ellesmere Museum. By oversight, these records did not appear in Sinker's Flora of 1985. However, the fern was found to be still present in 2004 (SJ434335, A.J. Lockton). It seems possible that there never was any *Thelypteris palustris* at Cole Mere itself.

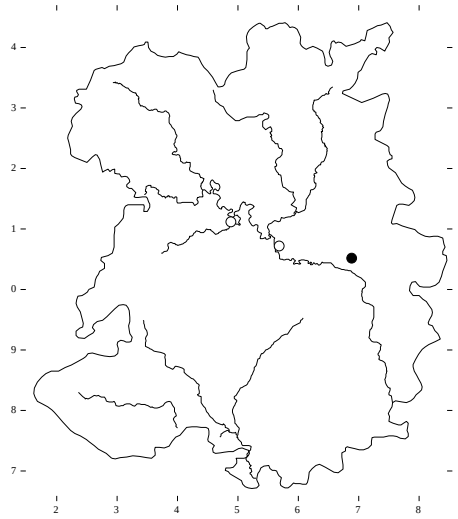
Thelypteris palustris



- **Lesser Sea-spurrey** *Spergularia marina* (L.) Griseb. was found on a roadside at Crudgington (SJ634180) by Sarah Whild on 18th August 2004. This is only the second record of it in the county, although it seems likely that it may be quite widespread now on roadside verges, with other halophytes such as Danish Scurvygrass *Cochlearia danica*.

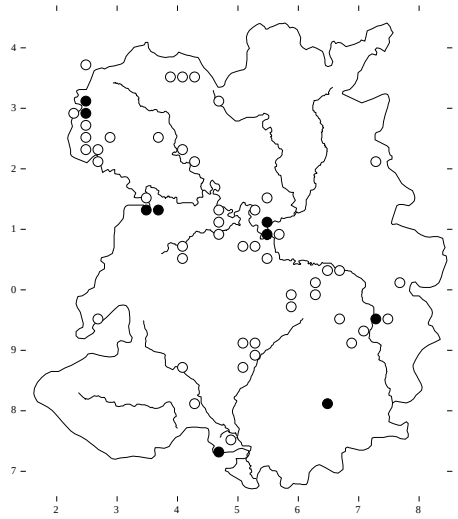
- Stephen Lewis found **Spotted Medick** *Medicago arabica* (L.) Huds. in an abandoned allotment in Madeley, Telford (SJ698041) on 11th October 2004 (conf. A.J. Lockton, Hb. SFG). It is a native plant of grassland on sandy soils in the south of England which has been spreading northwards in recent years. In the past it has been recorded only as a casual in the county: William Beckwith found it at Eytonrock (SJ5606) in 1880 and Dorothy Evans & Joan Connell recorded it at Meole Brace (SJ4911) between 1970 and 1973.

Medicago arabica



- Ron Iremonger reported a population of **Hound's-tongue** *Cynoglossum officinale* L. at Attingham Park (SJ552100) on 17th May 2004. This species appears to be much rarer in the county than it once was, and is worth keeping an eye out for. It has only been recorded in nine places since the Flora.

Cynoglossum officinale

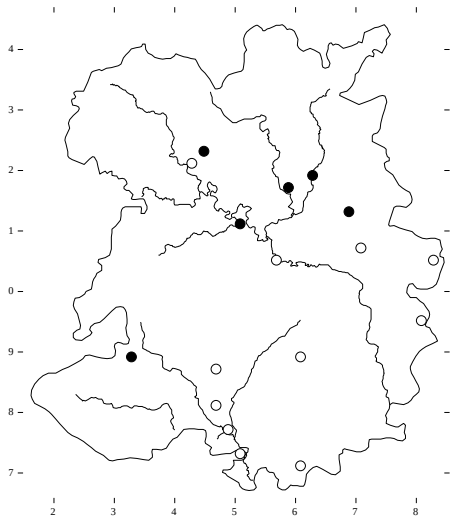


- The hybrid sedge *Carex x fulva* Gooden. (*Carex hostiana* DC × *viridula* Michaux) was first discovered by Shropshire botanist Edward Williams at Cronkhill Bank (SJ5308) in 1800. Type specimens are at **BM** and **LIV**. Although it is quite a common hybrid, it was not seen in the county again until 1893, when Richard Benson recorded it at Thresholds (SO4199) on the Long Mynd. After that there was another long gap before Sinker found it at Catherton Common (SO6378). This year Kate Thorne found it again in both those areas, at Darnford (SO4297 & SO4198), Wild Moor (SO4296), Stanbatch (SO4093) and Titterstone Clee (SO6078). Specimens have been confirmed by A.O. Chater (Hb. SFG).

- **Wood Fescue** *Festuca altissima* All. was found in Oaks Wood (SJ410047) by Wendy Compson & Alex Lockton on 5th June 2004 (det. S.J. Whild, Hb. SFG). This is a new site for a plant that has previously been recorded in just three places in the county – by the Borle Brook near Highley in two places (SO716836 & SO730835) and in Lydebrook Dingle (SJ660060). Its presence at the three previously known sites has been confirmed this year by Alex Lockton and Kate Thorne, so it qualifies as a locally scarce plant.

- **Black-grass** *Alopecurus myosuroides* Huds. has been until recently a rare plant in Shropshire, although it has been recorded here since 1800. It is considered an archaeophyte, as it occurs in arable fields, where it is sometimes a serious pest. This year it turned up on roadsides in Trench (SJ5912, S.J. Whild, 21st May) and Crudgington (SJ6318, 18th August, Whild), which suggests that it may be spreading.

Alopecurus myosuroides



Oaks Wood and the NVC borderland

Alex Lockton

Oaks Wood (SJ4104) is an acid oak woodland to the east of the Habberley Brook adjacent to the Wildlife Trust's Earl's Hill Nature Reserve, near Pontesbury. It is an interesting site to study, because the species-rich calcareous woodland on Earl's Hill provides a striking contrast to the acid woodland just a few yards away on the other side of the stream. Being on the east side of the hill, the valley is sheltered and humid, producing a more oceanic microclimate than is normally found in this county.

Most of Oaks Wood is now conifer plantation, but patches of deciduous woodland persist along the brook and there is one large block on a steep slope due east of the nature reserve (photograph on the cover of this newsletter). In the 1960s and '70s this was considered part of the reserve itself, but it is not owned by the Wildlife Trust, and is kept as a private nature reserve. Access is by permission, and the Field Studies Council have an agreement with the owner to use it for educational groups. In June this year I took a group of Woodland NVC students there to study the vegetation communities. The results highlighted a particular problem with woodland vegetation in Shropshire, as the county lies on the boundary between the dry, continental woodland types in the south-east of Britain and the wet, oceanic woods of the north and west.

The chief ecological interest of Oaks Wood has long been recognised as its rich assemblage of bryophytes. Among the county rarities there are the liverwort *Bazzania trilobata* (Greater Whipwort), which was discovered here by W.P. Hamilton in 1899. It is a plant of wet, western woodlands, and although it is not rare in Wales, Scotland and the Lake District, it is close to the edge of its range in Shropshire. It is still present in 2004, but only in small quantities (F.J. Rumsey). Other interesting bryophytes recorded there include *Cynodontium bruntonii* (Brunton's Dog-tooth) and both *Leucobryum glaucum* (Large White-moss) and *L. juniperoideum* (Smaller White-moss) – all westerly, oceanic species. Although the canopy of Oaks Wood is quite thin, and there is a very sparse shrub layer, the humidity at ground level is probably crucial to the conservation of this site.

Another rare plant of humid habitats was discovered there this year by the students on the course. This is *Festuca altissima* (Wood Fescue), which grows in one of the steep side-valleys. It is known in just four sites in the county, all steep little valleys with ancient woodland and very high humidity. The full list of woodland indicator species at the site is impressive, showing that it easily warrants its SSSI status. In the list below, the calcicoles occur along the streams and the calcifuges are found on the more acidic slopes and conglomerate outcrops.

AWVPIs at Oaks Wood

Polystichum setiferum, Soft Shield-fern
Blechnum spicant, Hard Fern
Anemone nemorosa, Wood Anemone
Ceratocapnos claviculata, Climbing Corydalis
Hypericum pulchrum, Slender St. John's-wort
Tilia platyphyllos, Large-leaved Lime
T. cordata, Small-leaved Lime
Chrysosplenium alternifolium, Alternate-leaved Golden-saxifrage
Lathyrus linifolius var. *montanus,* Bitter-vetch
Circaea x intermedia, Upland Enchanter's-nightshade
Polygala serpyllifolia, Heath Milkwort
Acer campestre, Field Maple
Oxalis acetosella, Wood-sorrel
Sanicula europaea, Sanicle
Stachys officinalis, Betony
Lamiastrum galeobdolon, Yellow Archangel
Veronica montana, Wood Speedwell
Melampyrum pratense, Common Cow-wheat
Galium odoratum, Woodruff
Adoxa moschatellina, Moschatel
Luzula pilosa, Hairy Wood-rush
L. sylvatica, Great Wood-rush
Carex pilulifera, Pill Sedge
Milium effusum, Wood Millet
Festuca altissima, Wood Fescue
Melica uniflora, Wood Melick
Hyacinthoides non-scripta, Bluebell
Epipactis helleborine, Broad-leaved Helleborine

National Vegetation Classification

The NVC quadrats listed below were recorded in homogeneous acid woodland at Oaks Wood by Andy Barker & Joanna Haigh on 5th and 6th June 2004. Analysis of the data and use of the woodland vegetation keys produces an interesting result: it is extremely difficult to choose between W16 *Quercus* spp.-*Betula* spp.-*Deschampsia flexuosa* and W17 *Quercus petraea-Betula pubescens-Dicranum majus* woodland types. It is a bit dry for W17, with low cover of bryophytes overall. It does not quite fit W16, either, being too moist and westerly – *Dicranum majus*, for instance, does not normally occur in W16.

It turns out (Rodwell 1991) that W17 is the north-western oak wood community, not quite extending as far as Shropshire, whereas W16 occurs in the south-east, and Shropshire is shown as just about within its range. If one had to choose between the two for Oaks Wood, however, it would probably by W17 – but only marginally so. This is a problem often encountered in Shropshire, and there are similarly difficult woods at Clunton Coppice, Hope Valley and The Ercall. Oaks Wood, however, is probably the closest thing to W17 that can be found in the county.

Quadrats in acid woodland at Oaks Wood

	Q1	Q2	Q3	Q4	Q5
Polytrichum formosum	3	1	4	1	-
Dicranella heteromalla	-	1	-	-	-
Dicranum scoparium	2	-	-	-	-
D. majus	4	4	1	2	-
Leucobryum glaucum	6	5	5	2	-
Mnium hornum	6	5	6	2	2
Hypnum cupressiforme	4	2	1	1	-
Pteridium aquilinum	3	5	1	4	4
Dryopteris filix-mas	-	-	-	3	-
D. dilatata	-	-	-	3	-
Blechnum spicant	-	-	-	1	-
Picea abies	1	1	1	-	-
Pinus sylvestris	1	-	-	-	-
Fagus sylvatica	3	-	-	3	3
Quercus petraea	8	9	7	7	8
Betula pendula	5	4	-	7	5
Corylus avellana	-	-	-	2	-
Calluna vulgaris	4	7	6	-	2
Vaccinium myrtillus	6	5	1	4	7
Rubus fruticosus agg.	-	-	-	2	-
Sorbus aucuparia	3	2	2	1	2
Ilex aquifolium	4	3	4	2	2
Acer pseudoplatanus	-	-	1	2	-
Oxalis acetosella	-	-	-	1	-
Galium saxatile	-	-	1	-	-
Lonicera periclymenum	2	-	-	4	2
Luzula sylvatica	5	-	5	9	7
Deschampsia flexuosa	6	4	6	-	5
Holcus mollis	-	-	-	-	2

Q1 SJ41330466, Q2 SJ41370467, Q3 SJ41390466, Q4 SJ41280467 & Q5 SJ41370478.

It is perhaps not surprising that a similar dilemma occurs on the opposite side of the valley, in the ash woodland on the lower slopes of Earl's Hill. Here, the choice is between W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland (the south-easterly type) and W9 *Fraxinus excelsior-Sorbus aucuparia-Mercurialis perennis* woodland (the north-westerly type). In this case, the choice is rather easier. Mountain Ash, *Sorbus aucuparia*, is a very common tree in Shropshire, but in the samples recorded for W8 in the NVC it was very rare. If you take the simple step of ignoring Mountain Ash at Earl's Hill, the keys and computer identification of samples leads you straight to W8, not W9. This is possibly a common experience, as there are numerous instances where surveyors have reported W9 woodland in this county, but I have not personally seen any convincing examples. A recent book on woodland NVC, issued by English Nature, shows a significant increase in the range of W9 into the Midlands region, but it is not apparent that the data used is based on quadrat analysis, and it might be that their surveyors have similarly been fooled by the unexpectedly high abundance of *Sorbus aucuparia* in this region. At present, it seems best to consider that there is no W9 in Shropshire at all.

Sitting on the boundary between two vegetation regions can be quite an uncomfortable experience for anyone interested in the conservation of rare plants. In recent years the warm climate, combined with the effects of eutrophication on soils, has made this county rather unfavourable for the oceanic and northern elements in the flora. They seem to be somewhat vulnerable to disturbance and to succession to more southerly vegetation types. At Oaks Wood, for instance, there is a danger that the woodland could change from wet W17 to much drier W16 or W10 oak woodland, or possibly even to W15 beech woodland. If these changes occurred, it would almost certainly lead to the loss of the rare bryophytes in the ground layer.

It was therefore with some surprise that, this year, we saw that about 20% of the tree cover in Oaks Wood had been cleared, and the wood simply left on the ground. Apparently, this was ordered by a forestry consultant, under contract to the Forestry Commission, who was concerned about the lack of regeneration of trees in this ancient woodland. However, the purpose of a nature reserve is usually to protect natural ecosystems, not to provide a ready supply of timber, so it seems a wholly inappropriate action. The cleared areas are already filling with saplings of beech, pine and birch – but there is little sign that it will return to oak woodland in the near future and if we are right about the vulnerability of the vegetation communities, it might have caused irreversible harm to the site.

There are, therefore, two lessons to be learned from this experience. Firstly, we need a much better understanding of vegetation communities in the county and their importance to nature conservation. It seems possible that we are building up a false impression of the county at present, by using inadequate thoroughness in data collection methods. English Nature seems to think there is a lot of W9 woodland here, when it might turn out that there is none. Secondly, landowners with interesting oak woodland types, especially those on the W16/W17 boundary, need to be aware of the fragility of the vegetation that they own. Climate change and atmospheric deposition of nitrogen are threatening the relic northern vegetation types in this county. It is vital that these woodlands are not clear-felled or even coppiced without careful consideration. At Clunton Coppice, for instance, coppicing of W16 oak woodland in the 1990s resulted in rapid succession to sycamore-dominated W10 woodland of much lower conservation interest, although fortunately in that instance the owners (Shropshire Wildlife Trust) soon realised their mistake and stopped the coppicing.

Reference

Rodwell J.S. 1991. *British Plant Communities Volume 1 - Woodlands and Scrub*. Cambridge University Press, Cambridge.

Progress at Brown Moss in 2004

Alex Lockton, Sarah Whild & Nick Stewart

Brown Moss (SJ5639) continues to experience interesting changes. Last winter English Nature and the County Council embarked on a huge eradication programme for New Zealand Pigmyweed *Crassula helmsii*, which involved scraping the topsoil from an area on the margin of the main pool, taking it off site, dumping it in an arable field, and then spraying it with weed killer. There was also a considerable amount of tree felling around the main pool and around the edge of the island to facilitate this. During the summer all this work was followed up with an increased spraying programme, to eradicate any last vestiges of the dreaded *Crassula*. All the work took place on Pool 6, the main pool, because that is the only one in which *Crassula* occurs. It was first recorded there in 1990, and is well established throughout.

This year the margins of the pool are beginning to return to normal, with a good wide draw-down zone that includes some extensive patches of sandy soil exposed to full sunlight. In places this supports the uncommon OV35 *Lythrum portula-Ranunculus flammula* community, recorded here again for the first time since the mid 1990s – a great success for the project. One of the community constants, Water-purslane *L. portula*, is still absent (it appears to be easily confused with *Crassula helmsii*, and was eradicated by spraying a few years ago), but other members of the assemblage have returned, including Fine-leaved Water-dropwort *Oenanthe aquatica*, Lesser Marshwort *Apium inundatum*, Marsh St. John's-wort *Hypericum elodes* and Bog Pimpernel *Anagallis tenella*.

An unfortunate misunderstanding during the tree felling operation resulted in the destruction of the shrubs of *Salix* ^{x}*multinervis* on the margin of pool 6. This is the hybrid between Eared Willow *S. aurita* and Grey Willow *S. cinerea*. The former is an indicator of peat bogs in the lowlands. It was discovered here by Sinker in 1961 and forms part of the evidence that Brown Moss was once a peatland that had been worked out in the distant past. *S. aurita* is thought to have died out, but the hybrids, which were discovered in 2003, would have been descended from it. Fortunately, a few stumps of what is probably *S.* ^{x}*multinervis* have regrown on one part of the pool edge. They are not vigorous trees, and they pose no threat to the ecology of the pool.

The rarest plant found at Brown Moss is the liverwort *Riccia canaliculata* Channelled Crystalwort, which is found nowhere else in England. The area where it occurred last year was stripped of turf and sprayed, and this year it was gone from there, but it is not obvious whether this is in consequence of the drastic management or of the subsequent vigorous growth of Soft Rush *Juncus effusus* and *Crassula helmsii*. It is, however, now abundant on the western side of the pool, where there has been tree felling but no spraying or turf removal. It seems to favour the black mud that is left on the shore when the trees have been cleared. We assume that this mud is decayed leaf litter, and it does not seem to persist for many years when exposed to sunlight and wave action, but it builds up rapidly in the shelter of trees. The abundance of this rare liverwort therefore seems to depend on slightly mixed management: if the shores are kept too tidy, there will be no mud for it, but if they are allowed to become too overgrown by trees it will be shaded out.

An interesting new find this year was another rare liverwort, *Riccia cavernosa* Cavernous Crystalwort, found by Nick Stewart and Sarah Whild. It was growing in similar habitat to the *R. canaliculata*, but slightly higher on the shore, where it was not disturbed by wave action. *Crassula helmsii* has similar preferences, and was closely associated with it. This resulted in the main population being sprayed, but a few plants of *R. cavernosa* did escape. Also in this mud community was Orange Foxtail *Alopecurus aequalis* and Small Water-pepper *Persicaria minor*, the latter not recorded at Pool 6 before.

It seems reasonable to draw some conclusions from these results. The clearance of trees from around Pool 6 seems to have been a great success. This is the second pool to have been deforested, and both times the results have been spectacular, to the extent that new rare species have turned up – additions to the county list, no less. The cleared pools have immediately filled with water and remained full, whereas the unmanaged pools have continued to dry out. Whether this would happen was a subject of some contention, and a hydrologist's report commissioned by objectors to the management plan denied that trees were a serious factor in the hydrology; but the evidence is now overwhelming.

There is less evidence that scraping off the topsoil or spraying with glyphosate are effective management procedures. It is possible that the spraying is helping to maintain open habitat, which could be to the advantage of liverworts, but because this work is confined to drier areas (and it is not permitted to spray close to the water's edge), the only beneficiaries that we found were Common Liverwort *Conocephalum conicum* and Silver-moss *Bryum argenteum*. Both are common. Another rare liverwort, *Ricciocarpos natans*, appears to have vanished altogether, and this side-effect of *Crassula* spraying has apparently also been observed in sites in Essex.

The long-term management of Brown Moss is still problematic. There is now good evidence that tree clearance is the best method of restoring this site and that, if the trees can be cleared soon, the all-important OV35 vegetation community can be conserved. With good management it might even be possible to create the right conditions for Floating Water-plantain *Luronium natans*, Pillwort *Pilularia globulifera*, Least Bur-reed *Sparganium natans* and Lesser Water-plantain *Baldellia ranunculoides* to return. The highest priority is a concerted effort to remove the trees from a broad strip (at least 30m) around each pool and institute some sort of sustainable management to prevent them returning.

Options for this include grazing, mowing, spraying and periodic felling. Grazing by horses and cattle seems by far the best option, but this would incur some expense in the installation of cattle grids, temporary fencing, and possibly even shepherding of the livestock, as the site has public access. Mowing can help, especially as there are good populations of rabbits and geese to graze the margins. Just encouraging horse riders back onto the site could be advantageous – anything but leaving it unused and unmanaged.

Regular spraying with weed killer seems an unlikely approach to the management of a nature reserve, and it surely carries the risk of eliminating other species from the site. It does not seem very useful for controlling *Crassula*, because the Crassula also occurs in the pools, and it can recolonise bare ground quickly, whereas the rare native species are much slower to recover.

An interesting observation about *Crassula helmsii* is that it does favour the semi-shaded, silty shores of pools much more than fully exposed ones. This has also been observed by one of us (Stewart) at Derwent Water in Cumbria in recent years. Where the habitat has been restored, *Crassula* can hardly get established, apparently because it cannot withstand wave action on the shore and perhaps because it does not favour the sandy substrate.

Periodic felling of trees also seems a poor option. In one part of Brown Moss the trees were felled a few years ago in an effort to recreate heathland, but that area is now a mass of birch seedlings. Without some sort of ongoing management for a non-woodland habitat, all that tree felling does is reduce the appearance of woodland, while the ground flora continues to adapt to shady conditions.

We would therefore recommend the following course of action:-

- Do not worry about *Crassula helmsii* – despite early worries, it turns out not to have caused any real problems.
- Cut back the trees from around all the pools to a distance of at least 30m.
- Allow the pools to fluctuate naturally – do not dig any drainage ditches or attempt to stabilise water levels.
- Instigate some sort of management to keep the vegetation low. Ideally grazing, but mowing would also be an option, especially if there is some poaching by horses' hooves.

The best management action is often gradual and progressive: sudden changes of policy or large-scale felling programmes cause alarm amongst visitors to a site and can have unfortunate effects such as the accidental eradication of a species. What is needed is a constant, concerted effort to restore the site to favourable condition and keep it there.

Brown Moss is still one of the most important sites in Shropshire for rare plants, but it has declined seriously in recent years as a result of neglect. Although the attempts at *Crassula* control seem now to have been misguided, at least there has been some investment in site management, and the incidental tree felling has been spectacularly successful. If it were not for the work undertaken around pools 3b and 6, it would now be very questionable whether Brown Moss should still be considered a SSSI, as it is only at these pools that any of the rare plants are found. The overall conclusion is that the successful formula is now known and proven by empirical evidence. All that remains is to implement it.

Rare Plants still present at Brown Moss

- Channelled Crystalwort *Riccia canaliculata*: abundant on the shores of Pool 6. This is a Red Data Book plant, at its only known site in England.
- Cavernous Crystalwort *Riccia cavernosa*: rare, on drier parts of the shoreline. In danger from spraying for *Crassula*. A Nationally Scarce plant at only its second known site in Shropshire.
- Small Water-pepper *Persicaria minor*: rare around the margins of Pools 3b & 6, with about ten plants present. This is an uncommon plant in Britain, known at just one other site in Shropshire.
- Orange Foxtail *Alopecurus aequalis*: occasional on the margins of Pools 3b & 6, at its only currently known native site in Shropshire.
- Shoreweed *Littorella uniflora*: abundant now on the shores of Pool 6 following the recent management. It was once present in many of the North Shropshire meres, but is now only at Brown Moss. In recent years it has colonised pools on the Long Mynd.
- Marsh St. John's-wort *Hypericum elodes*: very rare on the margin of Pool 6, where it has just reappeared following tree clearance. It has become very rare now in lowland Shropshire (possibly only at Brown Moss) although there are still several populations on the Long Mynd and Titterstone Clee.

Rare plants that have recently gone

- Lesser Water-plantain *Baldellia ranunculoides*: extinct in Shropshire. Last seen at Brown Moss in 1996.
- Floating Water-plantain *Luronium natans*: currently two sites in Shropshire; last seen at Brown Moss in 1986.
- Least Bur-reed *Sparganium natans*: extinct in Shropshire. Last seen at Brown Moss in the 1980s.
- Pillwort *Pilularia globulifera*: extinct in Shropshire. Last recorded at Brown Moss in 1962.
- Small-fruited Yellow-sedge *Carex viridula* ssp. *viridula*: possibly extinct in Shropshire. Last seen at Brown Moss in 1997.

The Shrewsbury School Herbarium

Alex Lockton & Sarah Whild

British & Irish Herbaria, by Douglas Kent and David Allen (BSBI, 1984), lists all known herbaria of British vascular plants, including quite a few in Shropshire, and assigns codes to each. SHY is the "Clive House Museum" collection, now at Rowley's House in Shrewsbury. This is the most significant herbarium in the county, with many specimens by Leighton, Butler, Phillips, Beckwith, Serjeantson, Hamilton, Painter, Rutter and Sinker. Possibly the second largest collection is at Shrewsbury School, where there were apparently two herbaria, one in the library (SHYL) and one in the biology department (SHYB). Other collections include Ludlow Museum (LDL), Much Wenlock (MHWK), Oswestry Museum (OSWY), Shropshire Archaeological & Natural History Society (SHYAN), Shrewsbury Natural History Society (SHYN) and Shrewsbury Public Library (SHYP). In addition to the ones listed by Kent & Allen, there are rumours of a small collection of grasses at Bishops Castle, and what seems to be a fairly comprehensive collection of Shropshire plants at Preston Montford Field Centre.

This total of eleven herbaria has, of course, been unsustainable and arguably deleterious to science in the county, as resources have been stretched too thin. Regrettably there is now no institution in the county that has an active herbarium or even a botanical curator, despite the high level of interest in nature conservation. Peter Boyd, the collections manager at Shrewsbury Museum, says they cannot even provide room for our volunteers to come into the museum to work on the collection, so the county's main herbarium is essentially useless. The Oswestry Library herbarium may have been destroyed, and we have no idea what has happened to SHYAN, SHYN and SHYP. When we asked about the William Penny Brookes collection at Much Wenlock, we were told that it is a private collection and is not available to the public. The Preston Montford collection is labelled only by number, and the catalogue is missing, so it has very little value. The staff at Ludlow Museum are friendly enough, but it is mainly a zoological collection, and the number of plant specimens is small. The surprising fact is that the only adequately accessible herbarium in the county is at Shrewsbury School, where Botanical Society member Andrew Allott is Biology Master and former librarian James Lawson also has an interest.

The Shrewsbury School herbarium consists of a large purpose-built cabinet with two columns of drawers – about 50 in all. Each drawer contains a few folders of plants, arranged by family, according to the London Catalogue of about 1900. Most of the collection was compiled by Richard de Gylpyn Benson between 1891 and 1905, mostly of specimens collected by him and members of his family in the Pulverbatch area, but with some Botanical Exchange Club material from around the country. There are about 2,000 sheets in total, with a catalogue compiled by Benson; but the sheets themselves contain additional information, including vital facts such as the date of collection.

We visited Shrewsbury School earlier this year to look for a specimen of Tall Ramping-fumitory, *Fumaria bastardii*, that was listed in Benson's catalogue. If it had been correctly identified, it would have been the only proof of that species in the county. It turned out that the sheets they were mounted on were so brittle that it was difficult to take them out without damaging them. The specimens themselves were even more brittle, as fumitories are not robust plants at the best of times. To rectify this situation, we managed to persuade Tim Rich, at the National Museum of Wales to have the specimens remounted, and to confirm their identities. This cost the Botanical Society £100, but that is certainly not a commercial rate for the job. Happily, the specimens contained one extremely significant find – a type specimen of Painter's Fumitory, *Fumaria painteri*, which is one of the few plants considered to be endemic to Britain. It has only ever been found twice: at Bishops Castle (SO3288) in 1905, and at Ironbridge (SJ6703) in 1907, both times by William Painter himself. The specimen at SHYB is from Bishops Castle, and it provides us for the first time with the full date of the record. Other exciting finds included several new records of Purple Ramping-fumitory *Fumaria purpurea*, and one of the few records for Shropshire of Dense-flowered Fumitory *Fumaria densiflora.* There was, however, no *F. bastardii*, which must therefore be taken off the county list.

A full list of Salopian records of fumitories is given below.

Fumitories at SHYB

All specimens det. T.C.G. Rich, 2004

***Fumaria capreolata*, White Ramping-fumitory**

- Pulverbatch, SJ4202, Benson, Mr R.de.G., Aug 1895, "Pulverbatch. Lane." "Probably late flowering *capreolata*," TCGR.
- Wilderley, SJ4301, Benson, Mr R.de.G., 17 Jun 1902, "Wilderley Lane."

***Fumaria muralis*, Common Ramping-fumitory**

- Longden Common, SJ4304, Benson, Mr R.de.G., 21 Aug 1895, "*Fumaria muralis* ssp. *boraei*. Waste ground near Longden Common, Salop."
- Baschurch, SJ4221, Benson, Mr E.B., Jun 1898, det. Salmon, Mr C.E., "Baschurch, Salop." "Specimen rather poor, but I should call it, I think, *Fumaria Boraei* Jord." [C.E.S.].
- Pulverbatch, SJ4202, Benson, Mr R.de.G., 02 Jun 1902, "Castle Pulverbatch."
- Stapleton, SJ4605, Benson, Mr R.de.G., 04 Jun 1902, "Between Stapleton and Exfords Green."

- Church Pulverbatch, SJ4202, Benson, Mrs E.M., 12 Jul 1902, "*Fumaria muralis* ssp. *Boraei* var. *muraliformis*. Hedge, Rectory Garden, Pulverbatch."
- Pulverbatch, SJ4202, Benson, Mr R.de.G., 17 Jul 1902, "Garden, Castle Pulverbatch."

***Fumaria painteri*, Painter's Fumitory**

- Bishop's Castle, SO3288, Painter, Rev W.H., 16 Jun 1905, Pugsley, Mr H.W., "Bishops Castle, Salop."

***Fumaria purpurea*, Purple Ramping-fumitory**

- Pulverbatch, SJ4202, Benson, Mr R.de.G., 14 Aug 1894, "Pulverbatch."
- Stapleton, SJ4605, Benson, Mr R.de.G., 04 Jun 1902, "Hedges between Stapleton and Exfords Green."
- Wilderley, SJ4301, Benson, Mr R.de.G., 27 Jun 1902, "Hedges, Wilderley Lane."

***Fumaria officinalis*, Common Fumitory**

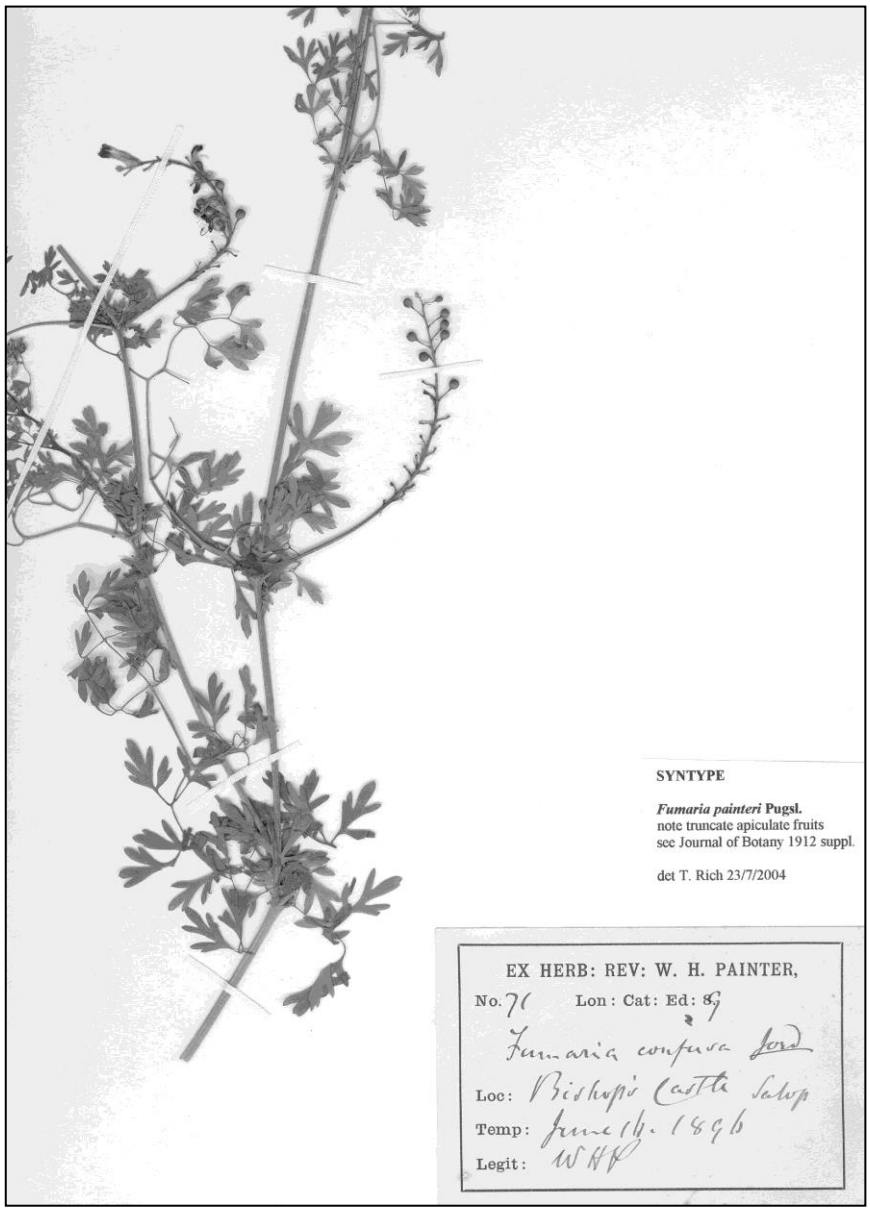
- Pulverbatch, SJ4202, Benson, Mr R.de.G., Jul 1891, "Cornfields, Pulverbatch."
- Stapleton, SJ4605, Benson, Mr R.de.G., 04 Jun 1902, "Hedges between Stapleton and Exfords Green."
- Wilderley, SJ4301, Benson, Mr R.de.G., 17 Jun 1902, "Wilderley Lane."
- Wilderley, SJ4301, Benson, Mr R.de.G., 27 Jun 1902, "Hedges, Wilderley Lane."
- Church Pulverbatch, SJ4202, Benson, Mr R.de.G., 12 Jul 1902, "Under garden wall (Tophouse)."
- Wilderley, SJ4301, Benson, Mr R.de.G., 17 Jun 1903, "Wilderley Lane."

***Fumaria densiflora*, Dense-flowered Fumitory**

- Stapleton, SJ4605, Benson, Mr R.de.G., 04 Jun 1902, "Hedges between Stapleton and Exford Green."

The Shrewsbury School herbarium could yet produce many more interesting finds. It is primarily a local collection, because Benson was an invalid during the time he created it, but it does include some material from elsewhere. The charophytes are currently being examined by Nick Stewart, but they seem to be mostly duplicates from well known sites.

One lesson from this experience is that minor herbaria should not be ignored. It is ironic that Shropshire probably spends more than enough money to have an active and well-run herbarium that would be a superb asset to nature conservation, but because the resources are split between so many institutions the benefit is insignificant. A bit of joined-up thinking in our local authorities would go a long way towards rectifying this situation and could produce much better value for money.



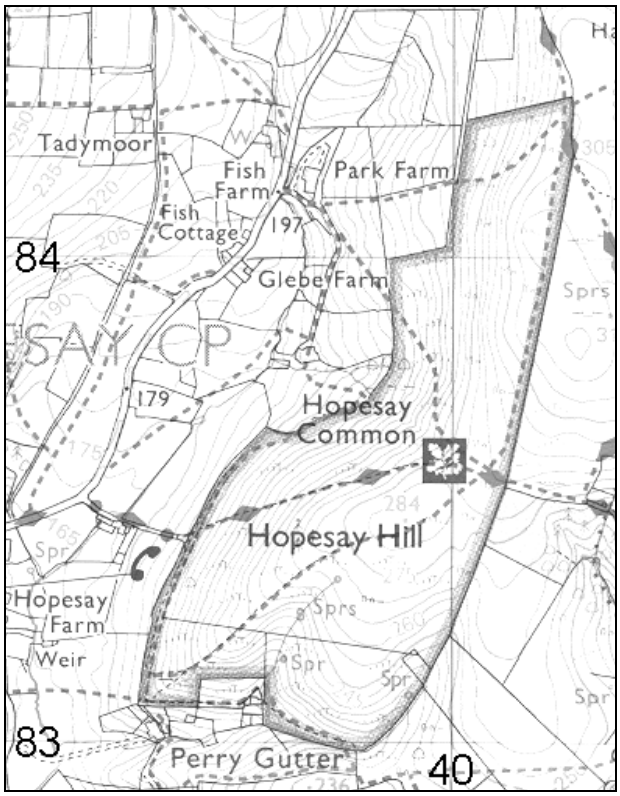
Specimen of *Fumaria painteri* at SHYB

Hopesay Hill

Alex Lockton

Hopesay Hill (SO3983) has emerged in recent years as one of the more important hills of South Shropshire. It is situated just to the east of Hopesay Village, north of Aston on Clun, and about 3 km west of Craven Arms. The western half is owned by the National Trust and is open to the public, but it has been largely neglected by botanists until the last year or two.

- Hopesay Hill



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In 1921 George Potts recorded Common Cottongrass *Eriophorum angustifolium* "in marshy ground on the hills near Hopesay." In 1946 Lilian Hayward reported Black Bindweed *Fallopia convolvulus* and Trailing St. John's-wort *Hypericum humifusum* there. For Sinker's Flora the square was covered by Alan and Susan Feest, who surveyed in 1976. The following is a list of the species they found.

- Species recorded by Dr & Mrs Feest, 1976

Blechnum spicant	Hard Fern
Drosera rotundifolia	Round-leaved Sundew
Anagallis tenella	Bog Pimpernel
Galium saxatile	Heath Bedstraw
Triglochin palustre	Marsh Arrowgrass
Carex echinata	Star Sedge
C. viridula ssp. *oedocarpa*	Common Yellow Sedge
C. pulicaris	Flea Sedge
Nardus stricta	Mat-grass
Narthecium ossifragum	Bog Asphodel
Dactylorhiza maculata	Heath Spotted-orchid

This list gives the impression of an acid hill flora with heathland and flushes, which would be typical for an unimproved area of common land in this part of the county. The National Trust has a record of Quaking Grass *Briza media* which was apparently made in 1981, but no other details are available. In 1982 Rob Rowe recorded Smooth-stalked Sedge *Carex laevigata* at SO397837, which is just outside the current boundary of the National Trust's land. It has not been recorded there since, but it might be worth looking out for.

The western half of the hill falls within one of the BSBI's Monitoring Scheme squares (SO38W), so it was visited in 1987 by Ian Trueman and Sue Lawley. Also, independently, Joyce Warren recorded Round-leaved Sundew *Drosera rotundifolia* there. Trueman & Lawley recorded a total of 157 species, including the following indicator species.

- Indicators recorded by Trueman & Lawley, 1987

Polystichum aculeatum	Hard Shield-fern
Drosera rotundifolia	Round-leaved Sundew
Anagallis tenella	Bog Pimpernel
Oxalis acetosella	Wood-sorrel
Myosotis secunda	Creeping Forget-me-not
Achillea ptarmica	Sneezewort
Eriophorum angustifolium	Common Cottongrass
Isolepis setacea	Bristle Club-rush
Carex echinata	Star Sedge
C. viridula ssp. *oedocarpa*	Common Yellow Sedge
Briza media	Quaking-grass
Bromopsis ramosa	Hairy Brome
Narthecium ossifragum	Bog Asphodel
Hyacinthoides non-scripta	Bluebell

By this time the list of interesting species was easily long enough for the site to qualify as a County Wildlife Site, and in fact it had been designated as such since the 1970s. Originally, the "prime site" had encompassed 200 acres (= 81 ha) (Prime Sites List 1983), but more recently the area considered by the Wildlife Trust to be of high enough quality has shrunk to just 15 ha (Wildlife Site List June 1998), although the area owned by the National Trust is 53 ha. In 1992 Gill Castle surveyed the Wildlife Site on behalf of the Wildlife Trust and recorded seven species, adding Bulbous Rush *Juncus bulbosus* to the site list.

In 1996 the National Trust surveyed again, sending a team from their Head Office led by Janet Lister and Keith Alexander. This survey team identified the flushes as the main features of ecological interest, and recorded a total of 68 species. The more significant of their finds are listed below, complete with invertebrates where these have some sort of rarity status. None is very rare, though – most are just restricted to hills.

➢ Species recorded by Lister & Alexander, 1996

Sphagnum palustre	Blunt-leaved Bog-moss
S. subnitens	Lustrous Bog-moss
S. fallax	Flat-topped Bog-moss
Ranunculus omiophyllus	Round-leaved Crowfoot
Drosera rotundifolia	Round-leaved Sundew
Anagallis tenella	Bog Pimpernel
Potamogeton polygonifolius	Bog Pondweed
Carex echinata	Star Sedge
C. viridula ssp. *oedocarpa*	Common Yellow Sedge
Aira praecox	Early Hair-grass
Narthecium ossifragum	Bog Asphodel
Livia juncorum	a jumping plantlouse
Paracymus scutellaris	a scavenger water beetle
Laccobius atratus	"
Cantharis lateralis	a soldier beetle
C. pallida	"
C. thoracica	"
Halyzia sedecimguttata	Orange Ladybird
Cis bidentatus	a small fungus beetle
C. nitidus	"
Phyllotreta flexuosa	a leaf beetle
Pilaria batava	a cranefly
P. fuscipennis	"
Dolichopus atratus	a dolichopodid fly

The Border Bryologists, led by Ron Shoubridge and Mark Lawley, visited in 1998 and greatly improved the lists of mosses & liverworts with a total of 32 species, including seven of *Sphagnum* (*palustre*, *squarrosum*, *capillifolium*, *subnitens*, *denticulatum*, *fallax* & *angustifolium*). Most of the other species they found are reasonably common, although Luminous Moss *Schistostega pennata* and Robust Rustwort *Marsupella emarginata* var. *aquatica* are worth a mention.

In 2001 and 2003 John Clayfield re-recorded many of the sedges and rarities present on the hill. In 2004 Kate Thorne conducted a survey on behalf of the National Trust. This gives a very complete and up-to-date list of the plants of the hill, complemented by some records of uncommon plants collected by Pam Green and Marjorie Leonard for the BSBI's Local Change project – a repeat of the 1987 Monitoring Scheme. These all confirm that Hopesay Hill is a fine site for vascular plants, but the really astonishing discovery came in September this year, when Dan Wrench found the Marsh Earwort *Jamesoniella undulifolia*. This is one of the rarest liverworts in Britain, although in all honesty it is so difficult to identify that it could be rather more widespread than is currently known. It aroused such interest at the British Bryological Society meeting this autumn that a field meeting was diverted there to see it. A few other rather uncommon species were noted at the same time.

Species list for Hopesay Hill

Arranged in taxonomic order and showing date of most recent record.

Calypogeia fissa	2004	*Bryum pseudotriquetrum*	1998	*R. repens*	2004
C. muelleriana	1998	*Aulacomnium palustre*	1998	*R. bulbosus*	2004
Cephaloziella rubella	1998	*Philonotis fontana*	1998	*R. flammula*	2004
Gymnocolea inflata	1998	*Climacium dendroides*	1998	*R. ficaria*	2004
Jamesoniella undulifolia	2004	*Palustriella commutata*	1996	*R. hederaceus*	2004
Marsupella emarginata aqu.	1998	*Cratoneuron filicinum*	1996	*R. omiophyllus*	2004
Scapania irrigua	1998	*Campylium stellatum*	1998	*Ulmus glabra*	2004
S. undulata	1998	*Warnstorfia fluitans*	1998	*Humulus lupulus*	1987
Scapania gracilis	1998	*W. exannulata*	1998	*Urtica dioica*	2004
Chiloscyphus pallescens	2004	*Drepanocladus revolvens*	1998	*Fagus sylvatica*	2004
Ptilidium ciliare	2004	*Calliergon stramineum*	2004	*Quercus petraea*	2004
Riccardia multifida	1998	*Pleurozium schreberi*	1998	*Q. x rosacea*	2004
R. chamedryfolia	1998	*Equisetum arvense*	2004	*Q. robur*	2004
Sphagnum papillosum	2004	*E. palustre*	2004	*Betula pendula*	2004
S. palustre	2004	*E. telmateia*	2004	*B. pubescens*	2004
S. squarrosum	1998	*Polypodium vulgare*	1987	*Alnus glutinosa*	2004
S. fimbriatum	2004	*Pteridium aquilinum*	2004	*Corylus avellana*	2004
S. capillifolium	1998	*Oreopteris limbosperma*	2004	*Montia fontana*	2004
S. subnitens	1998	*Athyrium filix-femina*	2004	*Stellaria pallida*	2004
S. denticulatum	2004	*Polystichum aculeatum*	1987	*S. holostea*	1987
S. platyphyllum	2004	*Dryopteris filix-mas*	2004	*S. uliginosa*	2004
S. fallax	2004	*Blechnum spicant*	1976	*Cerastium fontanum*	2004
S. flexuosum	2004	*Pseudotsuga menziesii*	2004	*C. glomeratum*	2004
S. angustifolium	1998	*Picea abies*	2004	*Sagina procumbens*	2004
P. commune	1998	*Larix decidua*	2004	*Lychnis flos-cuculi*	2004
Campylopus pyriformis	1998	*L. x marschlinsii*	2004	*Silene dioica*	2004
C. flexuosus	1998	*Pinus sylvestris*	2004	*Persicaria hydropiper*	1987
C. introflexus	1998	*P. nigra* ssp. *nigra*	2004	*Fallopia japonica*	1987
Schistostega pennata	1998	*Ranunculus acris*	2004	*F. convolvulus*	1946

Rumex acetosella	2004	*Oxalis acetosella*	2004	*Arum maculatum*	1987
R. acetosa	2004	*Geranium robertianum*	2004	*Lemna minor*	2004
R. conglomeratus	1987	*Hedera helix*	2004	*Juncus squarrosus*	2004
R. sanguineus	1987	*Hydrocotyle vulgaris*	2004	*J. bufonius*	2004
R. obtusifolius	2004	*Anthriscus sylvestris*	1987	*J. articulatus*	2004
Hypericum humifusum	2004	*Aegopodium podagraria*	1987	*J. acutiflorus*	2004
Drosera rotundifolia	2004	*Apium nodiflorum*	2004	*J. bulbosus*	2004
Viola riviniana	2004	*Angelica sylvestris*	1987	*J. effusus*	2004
Populus alba	2004	*Heracleum sphondylium*	1987	*J. conglomeratus*	2004
Salix fragilis	2004	*Solanum dulcamara*	2004	*Luzula campestris*	2004
S. alba	1987	*Calystegia sepium* ssp. *sepium*	1987	*L. multiflora*	2004
S. viminalis	1987	*Symphytum x uplandicum*	1987	*Eriophorum angustifolium*	2004
Salix caprea	2004	*Myosotis scorpioides*	1987	*Eleocharis palustris*	2004
S. cinerea	2004	*M. secunda*	2004	*Isolepis setacea*	2004
Alliaria petiolata	1987	*Stachys sylvatica*	1987	*Carex echinata*	2004
Arabidopsis thaliana	1987	*Lamium album*	1987	*C. panicea*	2004
Cardamine pratensis	2004	*Glechoma hederacea*	1987	*C. laevigata*	1982
C. flexuosa	2004	*Prunella vulgaris*	2004	*C. viridula* ssp. *oedocarpa*	2004
Calluna vulgaris	2004	*Mentha arvensis*	1987	*C. caryophyllea*	2003
Lysimachia nemorum	2004	*M. aquatica*	2004	*C. nigra*	2004
Anagallis tenella	2004	*M. x piperita*	1987	*C. pulicaris*	1976
Chrysosplenium oppositifolium	2004	*Callitriche* sp.	2004	*Nardus stricta*	2004
Filipendula ulmaria	1987	*Plantago major*	2004	*Festuca gigantea*	1987
Rubus fruticosus agg.	2004	*P. lanceolata*	2004	*F. rubra*	2004
Potentilla anserina	1987	*Fraxinus excelsior*	2004	*F. ovina*	2004
P. erecta	2004	*Cymbalaria muralis*	1987	*Lolium perenne*	2004
P. reptans	1987	*Digitalis purpurea*	2004	*Cynosurus cristatus*	2004
Geum urbanum	1987	*Veronica serpyllifolia*	2004	*Briza media*	2004
Aphanes australis	2004	*V. officinalis*	2004	*Poa annua*	2004
Rosa arvensis	2004	*V. chamaedrys*	2004	*P. trivialis*	2004
R. canina agg.	2004	*V. beccabunga*	1987	*P. humilis*	2004
Prunus spinosa	2004	*V. arvensis*	2004	*P. nemoralis*	1987
P. avium	1987	*Campanula rotundifolia*	2004	*Dactylis glomerata*	2004
P. laurocerasus	2004	*Galium uliginosum*	2004	*Glyceria fluitans*	2004
Malus sylvestris	2004	*G. palustre*	2004	*G. declinata*	1987
Sorbus aucuparia	2004	*G. saxatile*	2004	*Arrhenatherum elatius*	1987
Crataegus monogyna	2004	*Galium aparine*	1987	*Deschampsia cespitosa*	2004
Lotus corniculatus	2004	*Sambucus nigra*	2004	*D. flexuosa*	2004
L. pedunculatus	2004	*Lonicera periclymenum*	2004	*Holcus lanatus*	2004
Vicia sepium	1987	*Arctium minus*	2004	*H. mollis*	2004
V. sativa	2004	*Carduus crispus*	2004	*Aira praecox*	2004
Lathyrus pratensis	1987	*Cirsium vulgare*	2004	*Anthoxanthum odoratum*	2004
Melilotus officinalis	2004	*C. palustre*	2004	*Phalaris arundinacea*	1987
Trifolium repens	2004	*C. arvense*	2004	*Agrostis capillaris*	2004
T. dubium	2004	*Lapsana communis*	2004	*A. stolonifera*	2004
T. micranthum	2004	*Hypochaeris radicata*	2004	*A. canina*	2004
T. pratense	2004	*Leontodon autumnalis*	2004	*A. vinealis*	2004
Ulex gallii	2004	*Sonchus oleraceus*	1987	*Alopecurus pratensis*	2004
Epilobium hirsutum	1987	*Taraxacum officinale* agg.	2004	*A. geniculatus*	1987
E. montanum	1987	*Pilosella officinarum*	2004	*Phleum pratense*	1987
E. obscurum	1987	*Hieracium* sp.	1987	*Bromopsis ramosa*	1987
E. ciliatum	1987	*Gnaphalium uliginosum*	1987	*Brachypodium sylvaticum*	1987
E. palustre	2004	*Bellis perennis*	2004	*Elytrigia repens*	1987
E. brunnescens	2004	*Achillea ptarmica*	2004	*Danthonia decumbens*	2004
Chamerion angustifolium	2004	*A. millefolium*	2004	*Molinia caerulea*	2004
Ilex aquifolium	2004	*Matricaria discoidea*	1987	*Typha latifolia*	1987
Mercurialis perennis	1987	*Senecio vulgaris*	1987	*Narthecium ossifragum*	2004
Polygala serpyllifolia	2004	*Petasites fragrans*	1987	*Hyacinthoides non-scripta*	1987
Aesculus hippocastanum	2004	*Triglochin palustre*	2004	*Iris pseudacorus*	1987
Acer pseudoplatanus	2004	*Potamogeton polygonifolius*	2004	*Dactylorhiza maculata*	2004

Is Cramer Gutter still worthy of SSSI status?

Alex Lockton & Sarah Whild

Cramer Gutter (ca. SO6479) is a stream that drains part of Catherton Common, on the most north-easterly slopes of Titterstone Clee, and discharges into the River Rea above Cleobury Mortimer. To the north of the stream there was once a large area of common land called Oreton Common that was enclosed in the mid-19th century. To the south there is still much unenclosed rough pasture and heath within Catherton Common SSSI. Shropshire Wildlife Trust's Cramer Gutter Nature Reserve is an outlier to the SSSI situated within the enclosed fields to the north. It is a 4 ha field that contains the last remnant of the semi-natural vegetation of Oreton Common.

The history and natural history of this area has been described in previous newsletters and articles (e.g. Bingham 1992, Lockton & Whild 1998) and the key features of the site are well known. Although dragonflies such as the Keeled Skimmer *Orthetrum coerulescens* are often considered to be important here, they breed in the stream rather than the reserve, and so are simply visitors. The rare species that are most ecologically significant within the reserve include the Red Data Book liverwort Spurred Threadwort *Cephaloziella elachista*, the last Midlands population of Marsh Gentian *Gentiana pneumonanthe*, Bog Bush-cricket *Metrioptera brachyptera*, Small Pearl-bordered Fritillary *Boloria selene*, and the cranefly *Tipula grisescens*. All of these are bog species that depend on the *Sphagnum*-rich flushes and wet heath that occurs along the lower edge of the reserve, a few metres above the stream itself. The grassland above is relatively dry and of much less interest for conservation.

In recent years the reserve has largely scrubbed over and dried out. If the Marsh Gentians remain at all, there are probably just a few elderly specimens surviving. It seems inevitable that this will be the next species to go extinct in Shropshire, as the habitat has become quite unsuitable. The bog and wet heath along the bottom of the reserve are drying out and, although there has been a spectacular display of Bog Asphodel *Narthecium ossifragum* recently, this is a plant that thrives on drying mires. There is no monitoring of the other rarities on the site, but it seems unlikely that Spurred Threadwort will last much longer in the desiccated mire. So, what has gone wrong at Cramer Gutter, and is there any way of saving it?

One serious question that has to be asked is whether this is inevitable, as a consequence of climate change. If the rainfall on Titterstone Clee is insufficient to recharge the groundwater and maintain the year-round seepage in the flushes on the reserve, then there is nothing that can be done to save the reserve. There is, unfortunately, no useful data on this subject, and there is no way of knowing what the climate will do in future. However, we do know that Marsh Gentian still thrives in bogs in drier and warmer regions than south Shropshire - for example, in Norfolk, Dorset and Lincolnshire – so, on the face of it, it seems unlikely that climate change is either the major cause of the changes at Cramer Gutter or an insuperable obstacle to its restoration. We should look closer to home for both the cause and the solution.

There are two things that have very obviously changed on the reserve in the last thirty years or so. Firstly, there has been a massive increase in the amount of scrub and the size of the trees. Secondly, the flow of water into the reserve from the land above appears to have stopped, at least in the crucial summer months. There is a ditch that used to carry water along the top of the reserve and into a shallow pool, from where it trickled down the slope where the main population of Marsh Gentians occurred. The ditch is now often dry, and the pool itself was silted up until last year, when Defra undertook to restore it, following recommendations we made to the Wildlife Trust (Whild & Lockton 2001). Unfortunately, the pool restorers did too good a job: they constructed a deep and water-tight pool that has effectively stopped the seepage of water altogether, causing the gentian area to dry out completely.

It would seem fair to suggest that the reserve now has a period of just a few years before it loses the last vestiges of the ecological interest that make it special. It is probably no longer really worthy of SSSI status in its own right. In their sites review process, English Nature (www.english-nature.org.uk) considers all of Catherton Common to be in unfavourable condition, although they have optimistically listed the reserve as "recovering," presumably because attempts have been made to restore it. But if the conservation work has done more harm than good, then it will not be long before the consequences become apparent.

Saving Cramer Gutter

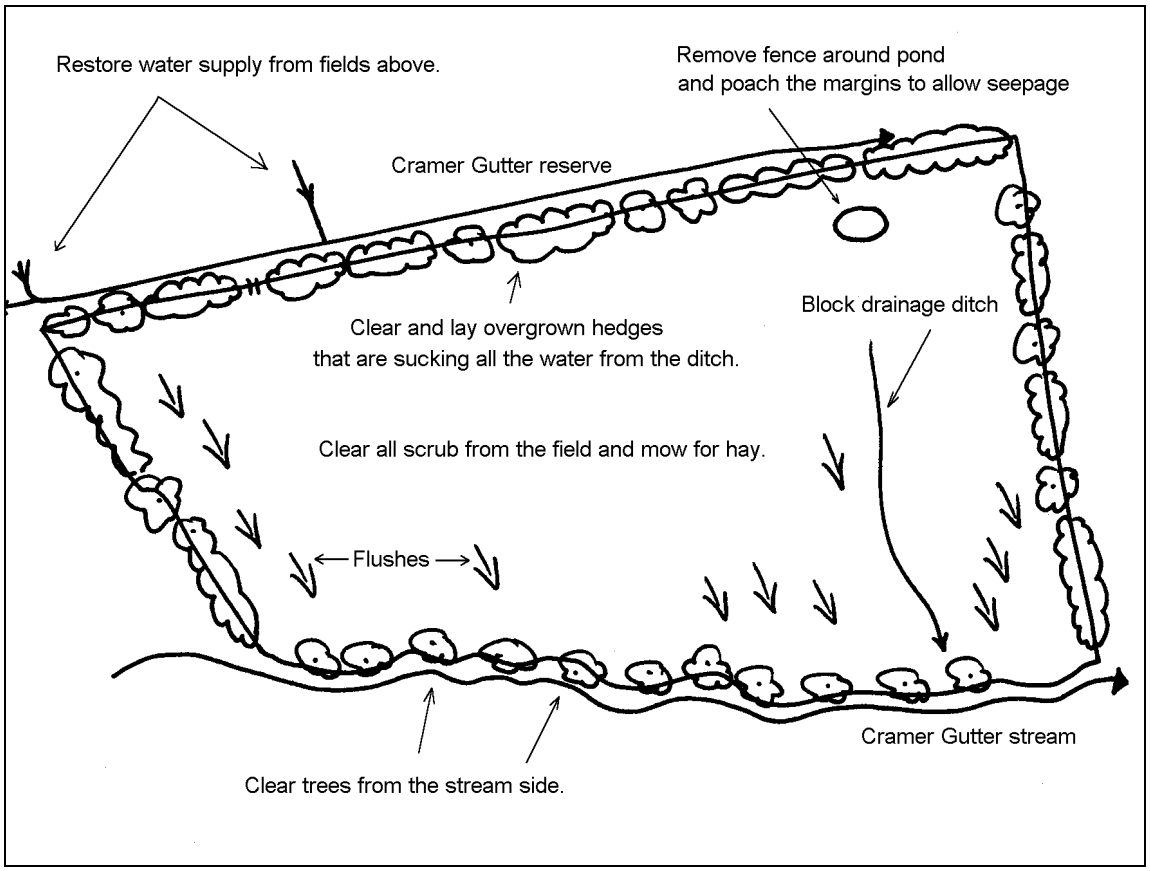
So is there any way of reversing the decline of this site and maybe saving some of the rare species there? Possibly, yes. Three crucial conditions need to be met: the loss of water (by transpiration) from the site must be reduced to maintain its wetness; the flow of surface water onto the site needs to be resumed; and the habitat needs to be returned from scrub to grassland and heath. These are quite dramatic steps to take, but all the affected land is in conservation management, so it should not be impossible. The specific actions are as follows:-

- Cut back the overgrown hedges around the reserve, removing most of the large trees, especially along the stream side and along the ditch at the top.
- Clear the gorse scrub from the reserve, not piecemeal and half-heartedly, but completely, using heavy machinery if necessary. There is almost no ecological interest in the areas of scrub that could be harmed. The grassland could in future be managed as hay meadow, as there is evidence it was in the past.
- Dismantle the nice new pond, remove the fence around it, and ensure that it leaks.

- Negotiate with the farmer of the fields above (which are in Countryside Stewardship) to dismantle any land drains that are taking away the rainwater and preventing recharge of the ground water. Find out if there are any other sources of good quality water that could help to save the reserve.

The destruction of Cramer Gutter Nature Reserve is something of an embarrassment for the nature conservation sector, and needs to be reversed if organisations such as the Wildlife Trusts and English Nature are to maintain their credibility. This is a small, largely self-contained site that can quite affordably be managed to demonstrate good practice. At the moment the contrast between the poor state of the nature reserve and the still rather fine (but allegedly "mismanaged") common land on the other side of the stream is stark.

Management prescriptions for Cramer Gutter Reserve


Restore water supply from fields above.
Remove fence around pond
and poach the margins to allow seepage
Cramer Gutter reserve
Block drainage ditch
Clear and lay overgrown hedges
that are sucking all the water from the ditch.
Clear all scrub from the field and mow for hay.
⟵ Flushes ⟶
Cramer Gutter stream
Clear trees from the stream side.

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